

now cancelled, claims, with claims 4 and 8 also somewhat modified to clarify their intent. For the reasons stated below, all of the pending claims are believed to be allowable. Additionally, claim 17 has been amended to correct a spelling error and several new claims have been added.

These Remarks will discuss the various claims in the same order in which they occur in the Office Action. First the 35 U.S.C. 102(b) rejection of the various non-cancelled claims is dealt with, followed by some comments on the 35 U.S.C. 103(a) rejections.

Claim 2 has been amended to incorporate now cancelled claim 1. Claim 2 adds to the integrated circuit of claim 1 "a multiplexing circuit coupled between the first terminal and the output and input circuits." The Bobry patent gives no disclosure of such a multiplexing circuit, merely showing in its Figure 14 that the line from amplifier 178 and that to amplifier 172 are connected. More particularly, Bobry does not disclose a multiplexing circuit as part of the integrated circuit. At the cited location of column 14, lines 41-48, Bobry states that amplifiers 172 and 178 may be integrated with respective converters 174 and 176, and later that converters 174 and 176 may be an integral part of the microprocessor 42. Thus, even assuming all of these elements (42, 172, 174, 176, 178) are part of a single integrated circuit, which is not explicitly disclosed, this is no indication that a single terminal, connected to both amplifiers 172 and 178, comes off the chip as a single pin, rather than the standard two pins. The Office Action is assuming such a possible integrated circuit would have a single combined input/output, a arrangement neither disclosed nor suggested in Bobry. Therefore, there is not only no disclosure of a multiplexing circuit, but also neither is there any indication that if one were employed that it would be part of a possible integrated circuit, rather than connecting these separate terminals being connected off the chip. For these reasons, it is respectfully submitted that the 102(b) rejection of claim 2 is not well founded.

Claim 4 has been amended to incorporate underlying, and now cancelled, claims 1 and 3, with the functional unit and activation circuit placed on the integrated circuit. It has also been amended to make clearer that the output is by driving the speaker. In the cited location (col. 14, lns. 57-64), the output in response to an input from the speaker is as a printed output and not through the same speaker as described in the claim. The mentioned "spoken communication" later in this passage of Bobry is not in response to an input through the speaker. Thus, Bobry provides no disclosure of the process of claim 4, namely an output through the speaker in response to an input from the speaker

where all of the various noted elements (save the speaker) are part of the integrated circuit. For these reasons, it is respectfully submitted that the 102(b) rejection of claim 4 is not well founded. Similarly claim 5 is believed allowable as it depends upon claim 4

Concerning claims 5 and 8, the latter now amended to incorporate now cancelled claim 1, these both include a memory array and its access circuit as part of the integrated circuit. Even allowing the broadest description of which elements of Bobry's Figure 14 are on an integrated circuit (cf. the discussion of claim 2 above), there is no indication that memory 46 in these Figures 14 forms part of the integrated circuit. In particular, this element 46 is shown as a distinct, ghosted box containing ROM 48 and RAM 50. (Bobry does not disclose the access circuit which is commonly formed with the memory on the same circuit.) Therefore, it is respectfully submitted that claim 8 is allowable and claim 5 is additionally allowable for these reasons. As claims 6 and 9 each depend upon one of these two claims, they are similarly believed to be allowable.

Claim 10 is now cancelled.

Claim 13 describes applying "to the input/output pin an output signal representing a sound" where "in response to an input signal from the input/output pin, the activation circuit activates the sound processing circuit": that is, the integrated circuit supplies an output representing a sound to the pin in response to an input on the same pin. As discussed with respect to claim 4, Bobry discloses a printed output in response to an input, and an output to the speaker due to a different sort of input, but there is no disclosure of an output representing a sound in response to an input on the pin. In particular, there is no disclosure of this output being applied to the same integrated circuit pin as that on which the input signal was received. For these reasons, it is respectfully submitted that the 102(b) rejection of claim 13, and therefore dependent claims 14-19, is not well founded.

Claim 17 is additionally believed allowable as it further includes a memory array and its read and write circuits on the integrated circuit, which, as discussed above with respect to claims 5 and 8, is not the case with Bobry.

Claim 20 is method claim that, similarly to claim 13, provides a sound output to drive the speaker in response to an input signal from the speaker and is believed allowable for the same reasons as discussed above with respect to claim 13. Consequently, dependent claims 21-24 are also believed allowable.

Several of the pending claims were rejected on an obviousness basis. Claim 11, now amended to independent form, describes a three pin package for the integrated circuit. As noted above with respect to claims 5 and 8, Bobry does not disclose or suggest incorporating the memory 46 of its Figure 14 into an integrated circuit. To connect this memory as shown in this Figure 14 would an additional two pins for the circuit. When the input, output, power and ground connections are included, this results in a minimum of five pins, again assuming a combined input/output pin in Bobry, which is not disclosed. Therefore, it is respectfully submitted that an obviousness rejection of claim 11 and its dependent claim 12 over Bobry in view of the cited Dallas Semiconductor data sheet is not well founded. Similarly, claim 23 is additionally believed allowable for this reason.

Claims 7, 18, and 24 are believed allowable as they depend, respectively, from claims 4, 13, and 20, the dependence of claim 7 having been changed from now cancelled claim 3. Additionally, it is believed that the 103(a) rejection based on Bobry in view of Armstrong is not well founded. As discussed above with respect to claims 4, 13 and 20, Bobry does not describe or suggest the use of a single input/output pin or terminal on the integrated circuit to both supply to and receive from the speaker. As such, there would be no need or motivation to provide the sort of delay circuit as described in Armstrong since this sort of traffic control on the pin would not be required.

This ability to use the speaker as input to record sound in the memory array of the integrated circuit which then can be played back later through this same speaker when activated, again through the use of this speaker, is described in the Summary of the present application on page 3, lines 10-21: "The movement of the speaker diaphragm generates an input signal that activates the system function, for example, by activating playback of a previously recorded signal." New claims 25-28 are drawn to this particular embodiment where the sound output has been previously recorded in the memory array by use of the speaker.

For any of these reasons, reconsideration of the Office Action's rejection of claims 2, 4-9, and 11-24, and consideration of new claims 25-28, is therefore respectfully requested, and an early indication of their allowability is earnestly solicited.

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Respectfully submitted,

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